

## **VIABLE OPTIONS FOR TREATING CHILDHOOD OBESITY: MAKING USEFUL RECOMMENDATIONS FOR FAMILIES WITH OVERWEIGHT CHILDREN AND TEENS**

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*Dr. Jones: It looks like Jenny is in the 97<sup>th</sup> percentile for her age and gender. This means that she's definitely overweight, but you probably knew that anyway.*

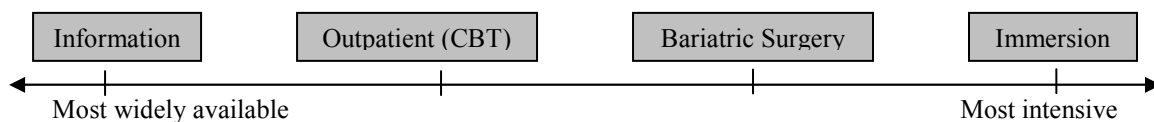
*Ms. Smith: Yes, I knew that and so does she. We figure she's about 40 pounds overweight. We've tried various diets and some exercise programs, but haven't really gotten anywhere. Now what? Do you have any recommendations?*

*Dr. Jones: Yes, I certainly do...*

This conversation and thousands very much like it have occurred much more frequently in the last few years than they did a couple of decades ago. As the incidence of childhood and adolescent obesity has tripled in the past 25 years, efforts to understand what to do about this incredibly frustrating and debilitating problem have also increased.<sup>1 2</sup> The purposes of this paper are to evaluate the four primary options currently available to treat pediatric obesity and to make clear recommendations that families can use with their overweight child.

### **VIABLE OPTIONS**

Four options exist on a continuum from the most widely available to the most intensive treatments: information; outpatient treatment (primarily via cognitive-behavior therapy [CBT]); bariatric surgery; and immersion programs. Immersion is considered most intensive because it involves a 24-hour a day commitment, often for an extended period of time in an environment other than home. Bariatric surgery can involve a relatively permanent change in the digestive system that requires extended focus to maintain adequate nutrition and health.



## 1) Information: Books, Classes and Dietary Advice

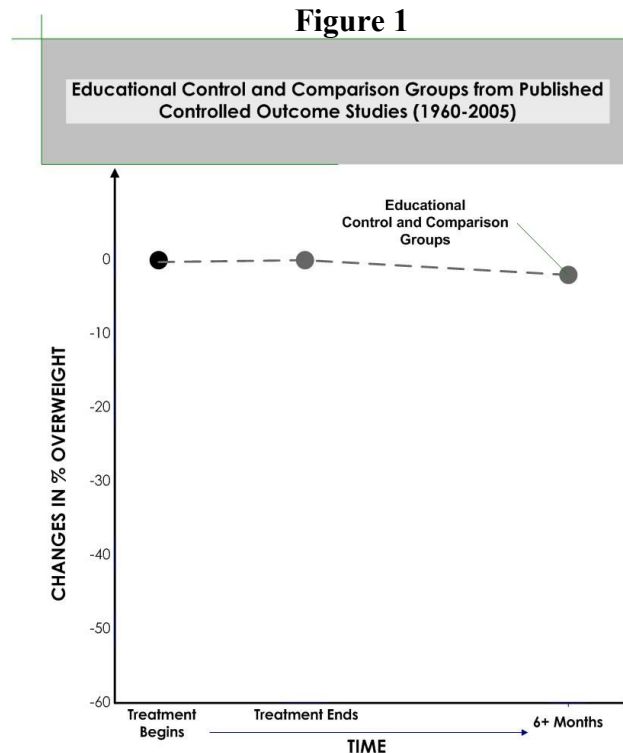
In recent years, consumers spent more than \$140 million on diet books.<sup>3</sup> The patient consumer who reads carefully and can recognize scientifically based recommendations can learn some of the key steps necessary for effective long-term weight loss. The real questions for families are how easily can they recognize valid recommendations and how useful are these good ideas? An evaluation of these diet books in Consumer Reports concluded that almost all of the diet books available had minimal basis in science and were relatively useless.<sup>4</sup>

Figure 1 [right] shows the results of all of the controlled treatment studies on childhood and adolescent obesity conducted since 1960 that included a follow-up of at least six months.<sup>2</sup> You can see that the outcome for educational controls and comparison groups shows relatively minimal change over time. You can expect that no more than a small percentage of families will see long-term weight loss based solely on information and education alone. Simply put, research shows reading about something often does not yield changes in behaviors.

## 2) Outpatient Cognitive-Behavior Therapy

Cognitive-Behavior Therapy (CBT) involves efforts to use the science of behavior to help people improve problems in living. Among the better known techniques that this includes, all of them empirically demonstrated to work, are: self-monitoring (systematic attention to target behaviors and maintaining a record of same); rational emotive therapy (review and evaluation of belief systems that cause emotional distress); coping skills and stress management training; and training in problem-solving.

This approach typically includes outpatient individual or group therapy, usually once per week, delivered by local hospitals or other medical facilities. The focus is not only on emotional, motivational, and self-regulatory development, but also on educational aspects. Participants and their families learn scientifically based information about diets, activity and self-focus. Many of these programs also include specific sessions on nutrition education (sometimes conducted by nutritionists) and some also provide activities groups (e.g., where participants get training by physical therapists in movement skills or strength training or just meet to walk).



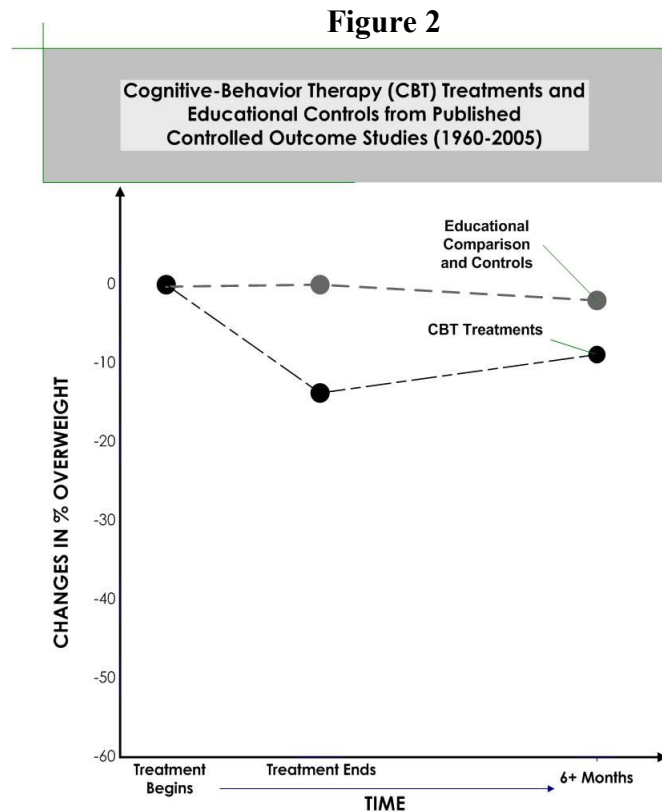
The research evidence includes some ten year outcome studies as well as a variety of shorter term evaluations. In general, Figure 2 [below] shows that participants, and quite often their families, lose a significant amount of weight initially, but tend to regain some of that over time. The longer term outcome studies do show, however, that a significant percentage of participants who receive this type of treatment (perhaps 20%) maintain clinically significant weight losses for many years.<sup>2</sup>

These programs remain relatively uncommon, but are available at university clinics and hospitals throughout the country. Longer treatments (ideally at least one year) generally produce better outcomes.<sup>2</sup>

### 3) Bariatric Surgery

In a paper published in March, 2007, Dr. Wilson Tsai and associates described the results of a national survey of 20% of non-federal hospitals about bariatric surgeries in adolescents.<sup>5</sup> Three times more bariatric surgeries were performed on adolescents in 2003 compared to 1996. This only amounted to 771 surgeries; 14 times more bariatric procedures were performed on adults that year.

The Roux-en-Y gastric bypass (RGB) is the most common surgery in use today. In this procedure, considered relatively simple by most surgeons, first the surgeon creates a much smaller stomach (a stomach pouch) by stapling a line (or attaching a plastic band) near the top of the stomach. This reduces the capacity of the stomach to about 6 ounces, from 32 ounces. Then, a Y-shaped section of the small intestine is attached to the stomach pouch to allow food to bypass the duodenum (first section of the small intestine) as well as the first portion of the jejunum (second section of the small intestine). The small stomach pouch decreases capacity of food intake and increases feelings of fullness. The small size of the new stomach may also reduce hunger by decreasing the production of the hormone Grehlin. Bypassing part of the small intestine decreases the body's ability to absorb the food that is consumed. Decreased hunger, increased feelings of fullness, and malabsorption combine to promote rapid weight loss, at least initially in those who work in lockstep with the procedure by limiting high fat eating and increasing activity.



Some initial results show promise, with substantial weight losses being recorded relatively frequently.<sup>6,7</sup> In contrast, several clinical trials revealed incidences of serious or fairly serious complications (e.g. including second surgeries; hernias; one death attributed to surgery,<sup>6</sup> two sudden deaths 2 and 6 years post-surgery<sup>8</sup>). Incidence rates of these complications seem elevated relative to adult counterparts, including reports of the need for surgical interventions post-surgery in 10% of the cases in one study<sup>6</sup> up to 40% in another.<sup>9</sup> In addition, the recommended standard for bariatric surgery for adolescents includes a BMI of 40 or greater with medical comorbidities.<sup>6,10</sup> This level of super-morbid obesity with co-morbidities remains relatively uncommon compared to the many millions of children and adolescents who are overweight or even morbidly obese.

#### **4) Immersion Programs**

Immersion Programs are characterized by a multi-disciplinary interventions and the development of a nearly ideal healthy living environment. Participants stay in such environments for periods ranging from two weeks to more than one year. They focus intently on losing weight and improving fitness in these alternative healthier cultures, sometimes also focusing on improving associated psychological skills. Weight loss camps have existed in the United States for more than fifty years. Hospital inpatient programs have also been developed along these lines, although very few still exist in the United States because of the prohibitive costs of extended stays in hospitals.

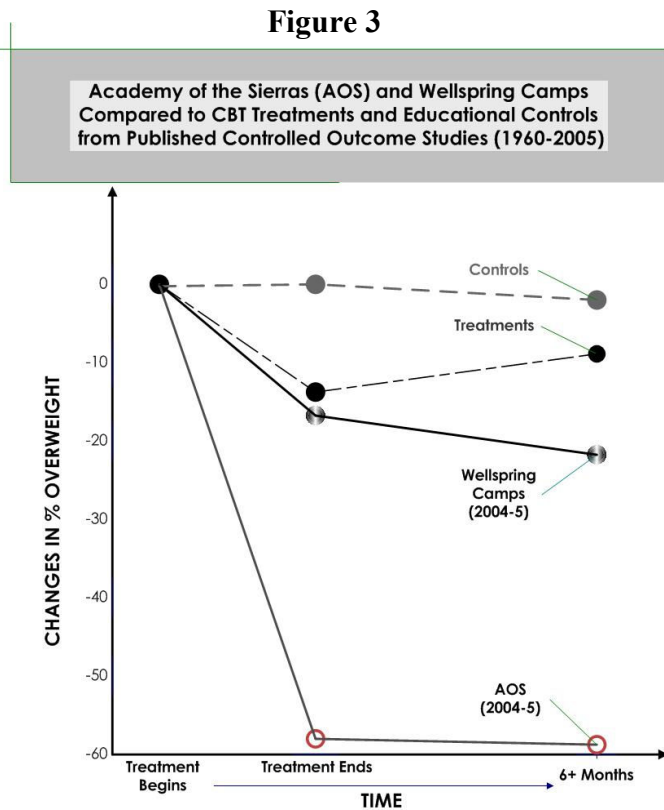
Dr. Caroline Braet and her colleagues from Zeepreventorium Pediatric Health Center in Belgium have evaluated a multidisciplinary immersion program in an inpatient hospital setting.<sup>11</sup> Dr. Paul Gately and co-workers developed the Carnegie Camp organized and staffed by Leeds Metropolitan University in the United Kingdom.<sup>12</sup> Healthy Living Academies (HLA), a division of Aspen Education Group and CRC Health Group, developed and evaluated the first year-round boarding schools devoted exclusively to overweight teenagers (Academy of the Sierras in California and North Carolina) and also developed and evaluated related summer camps (seven Wellspring Camps; six in the United States, one in the United Kingdom).<sup>13</sup>

These programs all include an emphasis on increasing activity and reducing total calories consumed, but some (e.g., Braet's inpatient program; HLA programs) emphasize cognitive-behavior therapy much more than others. Program elements beyond CBT also vary considerably. For example, HLA's immersion programs include intensive CBT (four times per week), education (nutritional, emotional, culinary, coordinated academic programs at the boarding schools); peer support; elaborate token economies; very low fat diets (with uncontrolled low density food at every meal); family involvement via workshops and regular contact; and activity programs (including self-monitoring of their activity via pedometers).

Initial 6-10 month follow-up evaluations of HLA's programs show outcomes that are more favorable than those seen in CBT outpatient treatment programs. Figure 3 [below] shows the results for Wellspring Camps' (2005, 2006) and for the first graduating class of the Academy of the Sierras in California. Although these initial findings are very favorable, it must be emphasized that the follow-ups are still relatively short in duration (six to ten months) and that the data were based on reports by parents and healthcare providers, as opposed to in-person assessments.

However, evaluation by the group from Belgium and the UK also show more significant weight losses than those typically seen in outpatient programs (e.g., reduction of average percent overweight in the Belgium program at a 14 month follow-up after a 10-month treatment phase from 76% overweight to 44%); some of these follow-ups included in-person weigh-ins and completion of various psychological assessments, as well.

The process data across several of these immersion programs show that the expected improvements in self-regulatory skills, eating pathology (e.g., binge eating), psychological well being and fitness. Generally, participants who were heavier initially, psychologically functioning relatively well, and who engaged the program most aggressively did better in the follow-up assessments.



## CONCLUSIONS

Table 1 summarizes the four major treatment approaches discussed thus far and their primary outcomes.

**Table 1**  
**Treatment Options: Summary of Effects**

- |   |  |
|---|--|
| • Education                             | - Minimal effects<br>- Perhaps 5% benefit significantly  |
| • Outpatient Cognitive-Behavior Therapy | - Modest effects<br>- Perhaps 20% benefit long term  |
| • Bariatric Surgery                     | - Perhaps 33-50% substantial improvement, but available for limited population<br>- Some post-surgical complications |
| • Immersion Programs                    | -Best potential for long-term change<br>-Perhaps 50% benefit long term   |

As you can see, the weakest interventions involve simple education and suggestions about change. More effective interventions involve greater commitment by both participants and their families. Bariatric surgery can be an option for very overweight children and adolescents, perhaps, but there are risks involved that families may not want to take. Outpatient treatments can work for some percentage of participants, but don't show the same level of promise as the most intensive immersion programs.

Table 2 shows factors that may make immersion programs more effective than traditional outpatient interventions. The table shows that immersion programs involve decreasing the negative influence of the obesogenic culture and increasing the intensity of the intervention (therapy, education). In addition, these programs rely on demonstrating more dramatic results than typically can be obtained in outpatient interventions (e.g. -4 lbs. per week on average at several of the weight loss camps). It seems probable that the dramatic weight losses produced improvements in self-efficacy beliefs and commitment to the approach. There's also evidence, at least anecdotally, that families became more committed to this lifestyle change process because they witnessed dramatic changes in their children.

**Table 2**  
**Immersion Model: Factors that May Make it Superior**

- Obesogenic Environment Removed
- Greater Intensity: Therapy, Education
- Increased Power: More Modeling & Support
- Momentum: Faster Weight Loss, More Dramatic > Motivation
- Family Support: Increased (> Credibility due to results)

**Recommendations**

Table 3 presents an approach to making recommendations to families. You can help the families of your overweight pediatric patients by recommending that they refuse to accept a less than favorable outcome for their children. They can start with some self-help efforts like getting themselves educated about appropriate approaches.

**Table 3**  
**Recommendations to Families**

- **Treatment Options** - Add structure and intensity if not seeing progress:
  - Self-help
  - Dietitians & Trainers
  - Weight Watchers & TOPS
  - CBT Outpatient Programs
  - Immersion Programs
- **Read More About It**

Fletcher, A.M. (2006). Weight loss confidential: How teens lose weight and keep it off – and what they wish their parents knew. Boston: Houghton Mifflin.

Fletcher, A.M. (1994). Thin for life: Ten keys to success for people who have lost weight and kept it off. Shelburne, VT: Chapters.

Kirschenbaum, D.S. (2006). The healthy obsession program: Smart weight loss instead of low-carb lunacy. Dallas: BenBella Books.

Kirschenbaum, D.S., Craig, R., Tjelmeland, L. (2007, in press). The Sierras weight loss solution for teens and kids. Toronto, CA: Penguin.

They can then add additional support and evaluate the outcomes. One of the suggestions includes using Weight Watchers and Take Off Pounds Sensibly (TOPS) as non-professional and widely available programs. These programs can add structure and focus and may help many participants more than simple educational approaches. The next level of intervention involves outpatient CBT treatment, preferably for at least one year. Finally, immersion programs are recommended for potentially more dramatic

outcomes. Even a surgical option is worth considering if these other interventions don't produce the desired effects and your pediatric patient is super-morbidly obese.

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